DEFENSE INFORMATION SYSTEMS AGENCY
JOINT INTEROPERABILITY TEST COMMAND
FORT HUACHUCA, ARIZONA 85613-7020

IN REPLY
REFER TO: Networks, Transmission and
Integration Division (JTE)

MEMORANDUM FOR DISTRIBUTION   //Signed 26 Dec 2000//

SUBJECT: Joint Interoperability Certification of Nortel
                Networks' MSL-100 Digital Switching System, with
                Software Release MSL-12

References: (a)   DOD Directive 4630.5, "Compatibility,
                      Interoperability, and Integration of
                      Command, Control, Communications, and
                      Intelligence (C3I) Systems," 12 Nov 1992

                (b)   CJCSI 6212.01B, "Interoperability and
                      Supportability of National Security Systems,
                      and Information Technology Systems," 8 May
                      2000

1.   References (a) and (b) establish the Defense Information
Systems Agency (DISA), Joint Interoperability Test Command
(JITC), as the responsible organization for interoperability
test certification. Additional references are provided in
Enclosure 1.

2.   The Nortel Networks' MSL-100 Digital Switching System with
Software Release MSL-12 meets all of its critical
interoperability requirements and is certified for Joint use in
the Defense Information System Network (DISN).

3.   This certification is based on interoperability testing that
was conducted at the JITC, Fort Huachuca, Arizona. Additionally,
this certification includes review of letters of compliance
submitted by Nortel Networks. The Certification Testing Summary
at Enclosure 2 provides more details about the test. Testing was
conducted during the period of 31 July 2000 through 27 October
2000.

4.   Table 1 is a list of the patch groups applied to the MSL-100
Software Release MSL-12 for certification.

JITC, Memo, Networks, Transmission and Integration Division (JTE), Joint Interoperability Certification of Nortel Networks' MSL-100 Digital Switching System, with Software Release MSL-12

Table 1.   Software Patch Groups

Software Patch Group ID#	Switch Layer
DSN01BCK	CCM
DSN00BLD	MSL
DSN02BTI	TL
XQM07X13	XPM
XQM08X13	XPM
XQM90X13	XPM
XQM91X13	XPM
XRR99X13	XPM

5.   The MSL-100 Digital Switching System, with software patch groups listed in Table 1, was tested in accordance with the requirements set forth in reference (c). The Internal Overload Control (IOC) requirement was not tested, but is currently operational in Nortel Networks' MSL-100 switches in the DISN, and commercial networks. IOC has been fielded for several years with no reported problems. Nortel Networks is currently researching a method to invoke an overload condition in the laboratory environment. Until such time, this requirement will remain untested by JITC. Based on current performance there has been no negative operational impact associated with this requirement.

6.   JITC disseminates certification testing information to the DOD community via the Joint Interoperability Tool (JIT), which resides on the SIPRNET at http://199.208.204.125/ or at http://198.17.54.202/ (mirror site), and on the NIPRNET at http://jit.fhu.disa.mil/. A copy of this certification memorandum and the certification testing summary will be available on the JIT. Instructions for obtaining access to JIT information are contained on the above homepages.

JITC, Memo, Networks, Transmission and Integration Division (JTE), Joint Interoperability Certification of Nortel Networks' MSL-100 Digital Switching System, with Software Release MSL-12

7.   The JITC point of contact is Mr. John Gese, DSN 879-5164 commercial (520) 538-5164, FAX DSN 879-4347 or E-mail to gesej@fhu.disa.mil.

FOR THE COMMANDER:

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JITC, Memo, Networks, Transmission and Integration Division
(JTE), Joint Interoperability Certification of Nortel Networks'
MSL-100 Digital Switching System, with Software Release MSL-12

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ADDITIONAL REFERENCES

(c)   Defense Information Systems Agency (DISA), Joint
        Interoperability and Engineering Organization (JIEO),
        Technical Report 8249, "Defense Information System Network
        (DISN) Circuit Switched Subsystem, Defense Switched Network
        (DSN) Generic Switching Center Requirements (GSCR)," March
        1987

(d)   Joint Interoperability Test Command, "Defense Switched
        Network Generic Switch Test Plan (GSTP)," 17 June 1999

(e)   "Nortel Networks' MSL-100 Global Customer Support Joint
        Testing Procedures," release(s) 01, 02, 23 October 1998

CERTIFICATION TESTING SUMMARY

1. **SYSTEM TITLE.** Nortel Networks' MSL-100 Digital Switching System, with Software Release MSL-12, and software patch groups listed in Table 1.

Table 1.   Software Patch Groups

Software Patch Group ID#	Switch Layer
DSN01BCK	CCM
DSN00BLD	MSL
DSN02BTI	TL
XQM07X13	XPM
XQM08X13	XPM
XQM90X13	XPM
XQM91X13	XPM
XRR99X13	XPM

2. **PROPONENT.** Defense Information Systems Agency (DISA).

3. **PROGRAM MANAGER.** Mr. Howard Osman, NS53, 11440 Isaac Newton Square, Reston, VA 22090-5087, E-mail: Osmanh@ncr.disa.mil.

4. **TESTERS.** Joint Interoperability Test Command (JITC), Ft. Huachuca, AZ.

5. **SYSTEM UNDER TEST DESCRIPTION.** The Nortel Networks' MSL-100 Digital Switching System is used within the Defense Information System Network (DISN) to provide both End-Office (EO) and Multi-Function digital switching throughout the global Defense Switched Network (DSN). The digital switching equipment tested is currently deployed in Europe, the Pacific, and is the backbone digital switching system for CONUS.

6. **OPERATIONAL ARCHITECTURE.** The Nortel Networks' MSL-100 Digital Switching System, with Software Release MSL-12, and software patch groups listed in Table 1 was tested at the JITC's Network Engineering and Integration Laboratory (NEIL) and the Strategic Switching Laboratory (SSL), in a manner and configuration similar to that of the DISN operational environment. This test was completed using two configurations. Testing of the system's required functions and features was conducted using the test configuration depicted in Figure 1. The configuration depicted in Figure 2 is representative of the DISN operational environment and was used to complete the network integration sub-test.

7. **REQUIRED SYSTEM INTERFACES.** The MSL-100 Digital Switching System with Software Release MSL-12 must interface with all DSN equipment. The Generic Switching Center Requirements (GSCR) that must be met for interoperability certification are listed in Table 2 along with its associated Generic Switch Test Plan (GSTP) paragraph.

Table 2. GSCR Functional Interface Requirements

GSCR Functional Interface Requirements	DSN GSTP Criteria para(s)	Critical	GSCR Requirement para(s)
Preset Conference	II-1.2	Yes	2.2.3
Multi-Level Precedence and Preemption	II-2.2	Yes	5.3.4.7
Hot Line Services	II-3.2	Yes	21.3.10
System Interface	II-4.2	Yes	10.2.1 10.2.2 10.5.5
CCS/SS7	II-5.2	No	6.5 6.6 2.2.5
Integrated Services Digital Network	II-6.2	No	21.1 21.2 21.3
Attendant Services	II-7.2	Yes	2.1.3
System Admin, Measurements and Service Standards	II-8.2	No	9.2.2.1 9.5
Y2K Rollover Dates	II-9.2	Yes	NA
Y2K Valid Set Date	II-10.2	Yes	NA
Y2K Invalid Set Dates	II-11.2	Yes	NA
Screening, Zone Restriction, and DSN Access Restriction	II-12.2	Yes	5.3.4
Community of Interest	II-13.2	No	2.2.2
Automatic Message Accounting	II-14.2	Yes	8.1
Call Treatments	II-15.2	Yes	5.2.2 5.2.1
Essential Service Protection	II-16.2	No	5.3.9
Internal Overload Control	II-17.2	No	5.3.8
Automatic Call Gap	II-18.2	Yes	16.5.3 16.6.3
DSN Announcements	II-19.2	Yes	5.6
Nailed Up Connections	II-20-2	No	2.2.4

Table 2. GSCR Functional Interface Requirements (continued)

GSCR Functional Interface Requirements	DSN GSTP Criteria para(s)	Critical	GSCR Requirement para(s)
Network Integration	II-21.2	No	2.2.1 5.3.4.7 10.5.5 6.5.2 2.2.5 6.5.10-11 6.6
Tactical Switch/DSN Interoperability	II-22.2	No	10.6
Advanced Defense Switched Network Integrated Management Support System (ADIMSS)	II-23.2	Yes	2.1.10

8.   TEST NETWORK DESCRIPTION. Interfaces tested between the MSL-100 and the other switches identified in Figures 1 and 2 accurately emulate that of the DISN operational environment.

9.   SYSTEM CONFIGURATIONS. Table 3 below provides the system configurations used in the test.

Table 3. Tested System Configurations

System Name	Hardware	Software
MSL-100	RISC Processor	MSL-12 with Software Patch Groups, DSN01BCK, DSN00BLD, DSN02BTI, XQM07X13, XQM08X13, XQM90X13, XPM91X13, XRR99X13,
Siemens EWSD	CP 113C	Version 16 with Backpack
Tekelec Eagle STP		Release 23.1
Siemens KN(S)4100		APS4V2.3
SMU 96 Tactical Gateway		Version RD302182
DSS Red Switch		Version 8.03
FORE ATM switch ASX-1000 and ASX-200BX	SCP-I960 Processor	Version 6.0.1 and FCS-Patch (1.48662)

10.   TESTING LIMITATIONS. The Nortel Networks' MSL-100 Digital Switching System is capable of supporting a Remote Switching Center (RSC), however, an RSC was not available for this test and is therefore not covered by this certification.
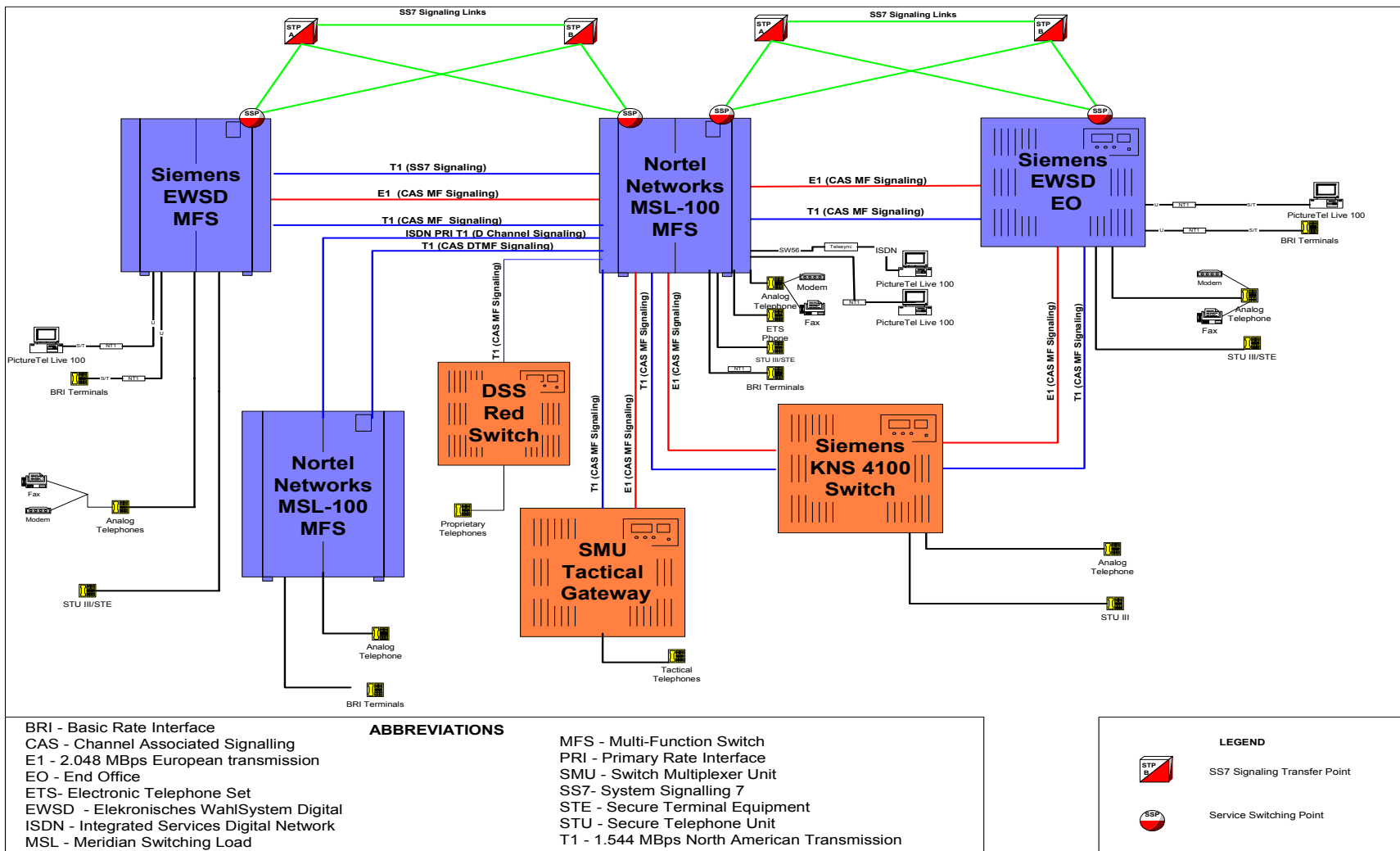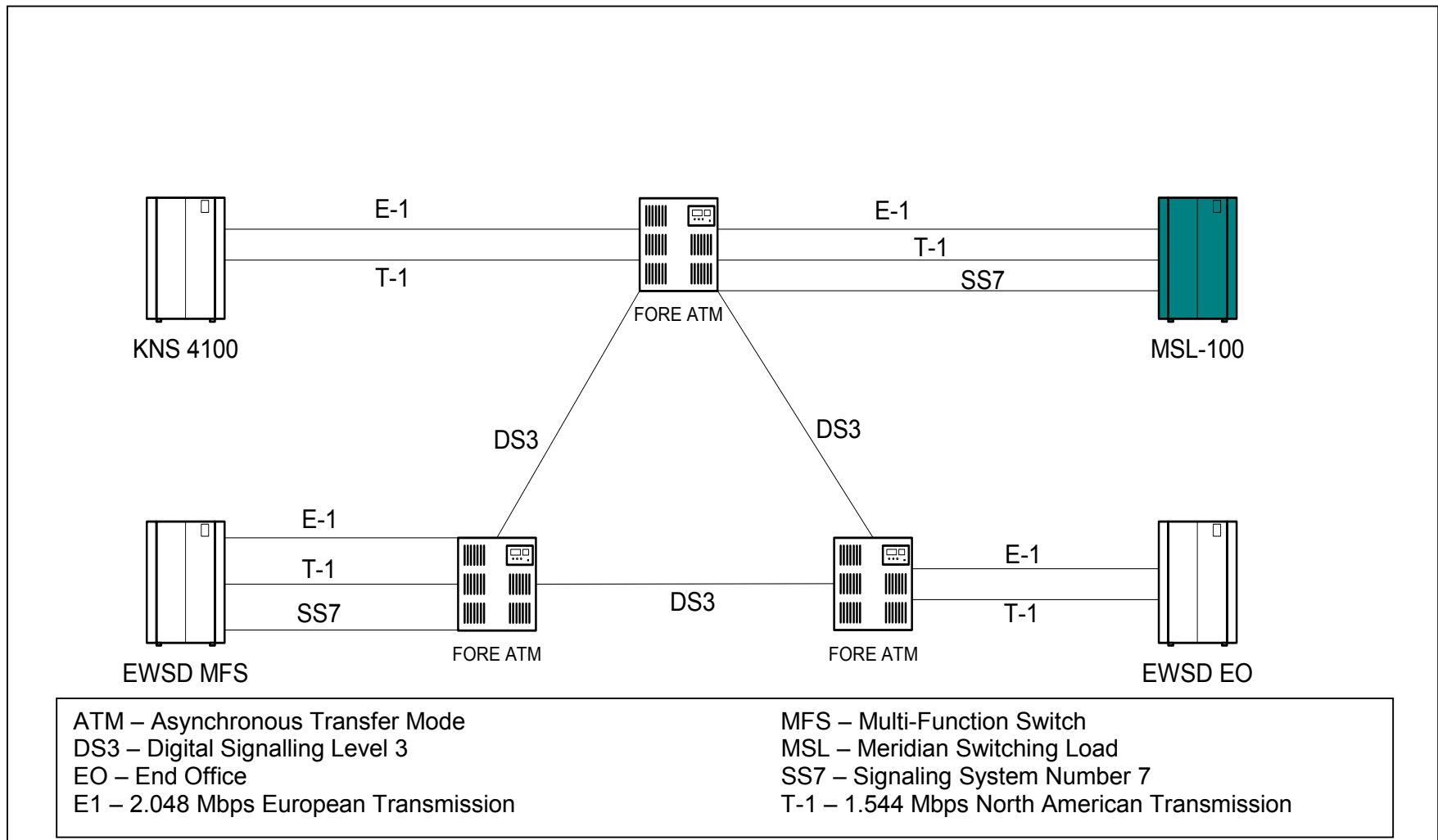
Figure 1. Test Configuration

Figure 2. Network Integration Test Configuration

The diagram shows a network configuration with the following components and connections:

- **KNS 4100** connects via E-1 and T-1 to **FORE ATM** (top center)
- **FORE ATM** (top center) connects via E-1, T-1, and SS7 to **MSL-100**
- **FORE ATM** (top center) connects via DS3 to **FORE ATM** (bottom left)
- **FORE ATM** (top center) connects via DS3 to **FORE ATM** (bottom right)
- **EWSD MFS** connects via E-1, T-1, and SS7 to **FORE ATM** (bottom left)
- **FORE ATM** (bottom left) connects via DS3 to **FORE ATM** (bottom right)
- **FORE ATM** (bottom right) connects via E-1 and T-1 to **EWSD EO**

Legend:

ATM – Asynchronous Transfer Mode	MFS – Multi-Function Switch
DS3 – Digital Signalling Level 3	MSL – Meridian Switching Load
EO – End Office	SS7 – Signaling System Number 7
E1 – 2.048 Mbps European Transmission	T-1 – 1.544 Mbps North American Transmission

11.   TEST RESULTS. Table 4 below synopsizes the MSL-100 Software Release MSL-12 test results. Paragraph 12 provides a detailed discussion of test results and discussion of any test discrepancies for each of the functional interface requirements certified.

**Table 4.   MSL-100 Digital Switching System Software Release
MSL-12 Test Results**

	DSN GSTP Test Title	Tested	Test Discrepancies	DSN GSTP Criteria para(s)	GSCR Requirement para(s)
Sub-Test D-1 Preset Conference				
D-1.1	Switch Capacity	Yes	No	II-1.2.a	2.2.3
D-1.2	Originations and Recordings	Yes	No	II-1.2.b-d	2.2.3 2.2.3.1
D-1.3	MLPP Interaction, Auto Redial, Alternate Address, Bridge Release, Secondary Conference, Preset Conference and ISDN Interoperability	Yes	No	II-1.2e-i	2.2.3.2 2.2.3.3 2.2.3.4 2.2.3.5 2.2.3.6
D-1.4	ISDN Features	Yes	Yes	II-1.2k	21-3.11.1 21-3.11.2 21-3.11.3
Sub-Test D-2 Multi-Level Precedence and Preemption (MLPP)				
D-2.1	Network Preemption	Yes	No	II-2.2a-l	22.1.1-3
D-2.2	Call Waiting	Yes	No	II-2.2.k.1	5.3.4.7.1
D-2.3	Call Hold	Yes	No	II-2.2.k.2	5.3.4.7.2
D-2.4	Call Forward Busy Station	Yes	No	II-2.2.k.3	5.3.4.7.3
D-2.5	Call Forward No Reply	Yes	No	II-2.2.k.4	5.3.4.7.4
D-2.6	Call Transfer	Yes	No	II-2.2.k.5	5.3.4.7.5
D-2.7	Conference Calling	Yes	No	II-2.2.k.6	5.3.4.7.6
D-2.8	Precedence Calls to a Remote Office	Yes	No	II-2.2.k.9	5.3.4.7.9
D-2.9	Circular Line Hunting	Yes	No	II-6.2.k.11	5.3.4.7.7
Sub-Test D-3 Hotline Services				
	DSN GSTP Test Title	**Tested**	**Test Discrepancies**	**DSN GSTP Criteria para(s)**	**GSCR Requirement para(s)**
D-3.1	Hot Line Services	Yes	No	II-3.2.a-f	21.3.10

Table 4.   MSL-100 Digital Switching System Software Release
MSL-12 Test Results (continued)

Sub-Test D-4 System Interface					
DSN GSTP Test Title		Tested	Test Discrepancies	DSN GSTP Criteria para(s)	GSCR Requirement para(s)
D-4.1	PCM-24 T1	Yes	No	II-4.2.a.1	10.2.1
D-4.2	PCM-30 E1	Yes	No	II-4.2.a.2	10.2.1
D-4.3	ISDN BRI	Yes	No	II-4.2.a.3	10.2.2
D-4.4	ISDN PRI	Yes	No	II-4.2.a.4	10.5.5
Sub-Test D-5 CCS/SS7					
DSN GSTP Test Title		Tested	Test Discrepancies	DSN GSTP Criteria para(s)	GSCR Requirement para(s)
D-5.1	Signaling Link Characteristics	Yes	No	II-5.2.b-e	6.5.2
D-5.2	Signaling Network Mgmt. Performance Measurements	Yes	No	II-5.2.f-l	6.5.4
D-5.3	MTP/ISUP Analysis-Analog	Yes	No	II-5.2.m	2.2.5 6.5.10.1.c 6.5.11 6.6 6.6.3
D-5.4	MTP/ISUP Analysis-ISDN Users	Yes	No	II-5.2.m	Same as D-5.3
D-5.5	MTP/ISUP Analysis-Call to Busy Station	Yes	No	II-5.2.m	Same as D-5.3
D-5.6	SS7/MF Interworking	Yes	No	II-5.2.a	6.5.10
D-5.7	SS7/MLPP Interworking	Yes	No	II-5.2.a	6.5.11
D-5.8	SCCP Capabilities	Yes	No	II-5.2.g-h	6.5.5
Sub-Test D-6 Integrated Services Digital Network (ISDN)					
DSN GSTP Test Title		Tested	Test Discrepancies	DSN GSTP Criteria para(s)	GSCR Requirement para(s)
D-6.1	BRI/SS7 Interworking	Yes	No	II-6.2.a	21.1
D-6.2	PRI/SS7 Interworking	Yes	No	II-6.2.a	21.2
D-6.3	BRI/SS7 Interworking	Yes	No	II-6.2.b	21.2
D-6.4	PRI/SS7 Interworking	Yes	No	II-6.2.b	21.2

Table 4.   MSL-100 Digital Switching System Software Release
MSL-12 Test Results (continued)

Sub-Test D-6 Integrated Services Digital Network (ISDN) (continued)					
DSN GSTP Test Title		Tested	Test Discrepancies	DSN GSTP Criteria para(s)	GSCR Requirement para(s)
D-6.5	MLPP and Interaction with other Services	Yes	Yes	II-6.2.c.1	21.3 21.3.1
D-6.6	Supplemental Services Conference Calls	Yes	Yes	II-6.2.c.2	21.3.2
D-6.7	Supplemental Service, User to User Signaling	Yes	No	II-6.2.c.3	21.3.3
D-6.8	Supplemental Service, Call Hold	Yes	Yes	II-6.2.c.4	21.3.4
D-6.9	Supplemental Service, Call Waiting	Yes	Yes	II-6.2.c.5	21.3.5
D-6.10	Supplemental Service, Normal Call Transfer	Yes	Yes	II-6.2.c.6	21.3.6
D-6.11	Supplemental Service, Explicit Call Transfer	Yes	Yes	II-6.2.c.7	21.3.7
D-6.12	Supplemental Service, ISDN Call Deflection	Yes	Yes	II-6.2.c.8	21.3.8
D-6.13	Supplemental Service, Community of Interest	Yes	No	II-6.2.c.9	21.3.9
D-6.14	Supplemental Service, Hotline	Yes	No	II-6.2.d	21.3.10
D-6.15	Preset Conference	Yes	No	II-6.2.e	21.3.11 21.3.11.1-4
D-6.16	DSN ISDN User to Network Signaling	Yes	No	II-6.2.f	21.3.11.8
D-6.17	Messaging	Yes	No	II-6.2.g	21.3.11.9

Table 4.   MSL-100 Digital Switching System Software Release MSL-12 Test Results (continued)

Sub-Test D-7 Attendant Services					
DSN GSTP Test Title		Tested	Test Discrepancies	DSN GSTP Criteria para(s)	GSCR Requirement para(s)
D-7.1	Call Display	Yes	No	II-7.2.a	2.1.3.2
D-7.2	Class of Service Override	Yes	No	II-7.2.b	2.1.3.3
D-7.3	Busy Override and Busy Verification	Yes	No	II-7.2.c	2.1.3.4
D-7.4	Interposition Calling	Yes	No	II-7.2.d	2.1.3.5
D-7.5	Interposition Transfer	Yes	No	II-7.2.e	2.1.3.6
D-7.6	Call Extension	Yes	No	II-7.2.f	2.1.3.7
D-7.7	Call Hold	Yes	No	II-7.2.g	2.1.3.8
D-7.8	Two Party Hold	Yes	No	II-7.2.h	2.1.3.9
D-7.9	Unattended Console	Yes	No	II-7.2.i	2.1.3.10
D-7.10	Audible Call Indicators	Yes	No	II-7.2.j	2.1.3.11
D-7.11	Automatic Recall of Attendant	Yes	No	II-7.2.k	2.1.3.12
Sub-Test D-8 System Admin, Measurements, and Service Standards					
DSN GSTP Test Title		Tested	Test Discrepancies	DSN GSTP Criteria para(s)	GSCR Requirement para(s)
D-8.1	Traffic Measurements	Yes	No	II-8.2.a	9.2.2.1
D-8.2	Database Management	Yes	No	II-8.2.b	9.5
Sub-Test D-9 Y2K Rollover Dates					
DSN GSTP Test Title		Tested	Test Discrepancies	DSN GSTP Criteria para(s)	GSCR Requirement para(s)
D-9.1	Date Transition Test	Yes	No	II.9.2	None
Sub-Test D-10 Y2K Valid Set Dates					
DSN GSTP Test Title		Tested	Test Discrepancies	DSN GSTP Criteria para(s)	GSCR Requirement para(s)
D-10.1	Valid Set Dates	Yes	No	II-10.2	None

Table 4.   MSL-100 Digital Switching System Software Release
MSL-12 Test Results (continued)

Sub-Test D-11 Y2K Invalid Set Dates					
DSN GSTP Test Title		Tested	Test Discrepancies	DSN GSTP Criteria para(s)	GSCR Requirement para(s)
D-11.1	Invalid Set Dates	Yes	No	II-10.2	None
Sub-Test D-12 Screening, Zone Restriction, and DSN Access Restriction					
DSN GSTP Test Title		Tested	Test Discrepancies	DSN GSTP Criteria para(s)	GSCR Requirement para(s)
D-12.1	Zone Restriction Capacity	Yes	No	II-12.2.b	5.3.4.2
D-12.2	DSN Access Restriction	Yes	No	II-12.2.c	5.3.4.3
D-12.3	Screening	Yes	No	II-12.2.a	5.3.4
D-12.4	Zone Restriction	Yes	No	II-12.2.b	5.3.4.2
Sub-Test D-13 Community of Interest (COI)					
DSN GSTP Test Title		Tested	Test Discrepancies	DSN GSTP Criteria para(s)	GSCR Requirement para(s)
D-13.1	Switch Capacity	Yes	No	II-13.2.a	2.2.2.1
D-13.2	COI General Treatment	Yes	No	II-13.2.b	2.2.2.1
D-13.3	COI Precedence Treatment	Yes	No	II-13.2.c	2.2.2.2
Sub-Test D-14 Automatic Message Accounting (AMA)					
DSN GSTP Test Title		Tested	Test Discrepancies	DSN GSTP Criteria para(s)	GSCR Requirement para(s)
D-14.1	AMA Call Detail Record	Yes	No	II-14.2	8.1
Sub-Test D-15 Call Treatments					
DSN GSTP Test Title		Tested	Test Discrepancies	DSN GSTP Criteria para(s)	GSCR Requirement para(s)
D-15.1	Originating Busy Treatment	Yes	No	II-15.2.a	5.2.1.1
D-15.2	Busy/Idle Status Treatment	Yes	No	II-15.2.b	5.2.2.1
Sub-Test D-16 Essential Service Protection (ESP)					
DSN GSTP Test Title		Tested	Test Discrepancies	DSN GSTP Criteria para(s)	GSCR Requirement para(s)
D-16.1	ESP	Yes	No	II-16.2.a	5.3.9

Table 4. MSL-100 Digital Switching System Software Release
MSL-12 Test Results (continued)

Sub-Test D-17 Internal Overload Control (IOC)					
DSN GSTP Test Title		**Tested**	**Test Discrepancies**	**DSN GSTP Criteria para(s)**	**GSCR Requirement para(s)**
D-17.1	IOC	No	No	II-17.2.a-f	5.3.8
Sub-Test D-18 Automatic Call Gap (ACG)					
Test Title		**Tested**	**Test Discrepancies**	**DSN GSTP Criteria para(s)**	**GSCR Requirement para(s)**
D-18.1	Automatic Call GAP	Yes	No	II-18.2.a-c	16.5.3.2
D-18.2	Manual Call GAP	Yes	No	II-18.2.a-c	16.6.3.1
D-18.3	CanF,CanT, and SKIP	Yes	No	II-18.2 a-c	16.6.3.2
Sub-Test D-19 DSN Announcements					
DSN GSTP Test Title		**Tested**	**Test Discrepancies**	**DSN GSTP Criteria para(s)**	**GSCR Requirement para(s)**
D-19.1	DSN Announcement Capacity	Yes	No	II-19.2.a	5.6
D-19.2	DSN Announcement	Yes	No	II-19.2.b-c	5.6
Sub-Test D-20 Nailed Up Connections					
DSN GSTP Test Title		**Tested**	**Test Discrepancies**	**DSN GSTP Criteria para(s)**	**GSCR Requirement para(s)**
D-20.1	Nailed Up Connections	Yes	No	II-20-2	2.2.4
Sub-Test D-21 Network Integration					
DSN GSTP Test Title		**Tested**	**Test Discrepancies**	**DSN GSTP Criteria para(s)**	**GSCR Requirement para(s)**
D-21.1	MLPP	Yes	No	II-21.2	2.2.1 5.3.4.7
D-21.2	Switch Interface	Yes	No	II-21.2	2.2.1 10.5.5
D-21.3	CCS/SS7	Yes	No	II-21.2	6.5.2 2.2.5 6.5.10-11 6.6

Table 4. MSL-100 Digital Switching System Software Release
MSL-12 Test Results (continued)

Sub-Test D-22 Tactical Switch/DSN Interoperability				
DSN GSTP Test Title	**Tested**	**Test Discrepancies**	**DSN GSTP Criteria para(s)**	**GSCR Requirement para(s)**
D-22.1	DSN Switch to Tactical Elements	Yes	No	II-22.2	None

Sub-Test D-23 Advanced Defense Switched Network Integrated Management Support System (ADIMSS)				
Test Title	**Tested**	**Test Discrepancies**	**DSN GSTP Criteria para(s)**	**GSCR Requirement para(s)**
D-23.1	Performance Management	Yes	No	II-23.2.a	2.1.10

12.   DISCUSSION. The following subparagraphs explain in further detail the test results and discrepancies noted in Table 4 and assess interoperability compliance to the GSCR requirements.

   a.   D-1 Preset Conference.

       (1)   All test procedures in this Sub-Test were conducted with the exception of supplemental ISDN BRI features related to preset conferencing. This requirement will not be satisfied until a later software release. Currently, there are no switches in the DISN that support ISDN BRI supplemental features.   Therefore, this discrepancy will have no operational impact.   Software Release MSL-12 met all the GSCR requirements, with the following exceptions:

           (a)   Software Release MSL-12 does not support the unique ISDN BRI supplemental feature requirements identified in the GSCR paragraphs 21-3.11.1 through 21-3.11.3, and 21-3.11.4 through 21.3.11.8.

           (b)   The Nortel ISDN BRI Model M5317T does not remove the preset conference notification tone/announcement by pressing the "#" or "A" key on the keypad as specified in the GSCR. Nortel Networks, however, can satisfy this requirement by providing an alternate method of removing the notification tone/announcement using a "flex" key on the ISDN BRI Model M5317T.

       (2)   The MSL-100 Software Release MSL-12 does not meet all of the GSCR interoperability requirements for Preset Conferencing, however, exceptions have no operational impact with no adverse effects on capabilities essential for mission accomplishment.

b.   D-2 Multi-Level Precedence and Preemption (MLPP). All of the test procedures in this Sub-Test were conducted with no noted discrepancies. The MSL-100 Software Release MSL-12 meets all GSCR interoperability requirements for MLPP.

c.   D-3 Hotline Services. All of the test procedures in this Sub-Test were conducted with no noted discrepancies. The MSL-100 Software Release MSL-12 meets all GSCR interoperability requirements for Hotline Services.

d.   D-4 System Interface. All the test procedures in this Sub-Test were conducted with no noted discrepancies. The MSL-100 Software Release MSL-12 meets all GSCR interoperability requirements for System Interfaces.

e.   D-5 SS7/CCS7. All test procedures in this Sub-Test were conducted with no noted discrepancies. The MSL-100 Software Release MSL-12 meets all GSCR interoperability requirements for SS7/CCS7.

f.   D-6 Integrated Services Digital Network (ISDN)

(1)   Test Results. All the test procedures for this Sub-Test were conducted. MSL-100 Software Release MSL-12 met all the GSCR requirements, with the following exceptions:

(a)   MSL-100 Software Release MSL-12 does not support the following unique ISDN BRI supplemental features as specified in the GSCR paragraphs listed below.   Nortel Networks will not satisfy these requirements until later software loads. There currently are no switches in the DISN that support ISDN BRI supplemental features, therefore, this discrepancy will have no operational impact.

- Multi-Level Precedence and Preemption (ANSI T1. 619a). GSCR Para. 21.3.1
- Conference Calling. GSCR Para. 21.3.2
- Call Hold. GSCR Para. 21.3.4
- Call Waiting. GSCR Para. 21.3.5
- Normal Call Transfer. GSCR Para. 21.3.6
- Explicit Call Transfer. GSCR Para. 21.3.7
- Call Deflection. GSCR Para. 21.3.8

(b)   When a new ISDN BRI assignment is attempted in Table "LNINV", a two step process is required to activate the service. In Table "LNINV" you must first assign the termination as "Hardware Assigned Software Unassigned "(HASU) then " Working" in order for the service to be activated. Prior to MSL-12, the only step required in Table "LNINV" was to assign the termination as "Working". This discrepancy will require re-education of the switch technicians in the field, and will have a minor operational impact.

(c)   Electronic Key Telephone Systems (EKTS) was not tested.

(2)   The MSL-100 Software Release MSL-12 does not meet all of the GSCR interoperability requirements for ISDN, however, exceptions have no operational impacts with no adverse effects on capabilities essential for mission accomplishment.

g.   **D-7 Attendant Services.** All test procedures in this Sub-Test were conducted with no noted discrepancies.   The MSL-100 Software Release MSL-12 meets all GSCR interoperability requirements for Attendant Services.

h.   **D-8 System Administration, Measurement, and Service Standards.** All test procedures in this Sub-Test were conducted with no noted discrepancies. The MSL-100 Software Release MSL-12 meets all GSCR interoperability requirements for System Administration, Measurement, and Service Standards.

i.   **D-9 Year 2000 Rollover Dates.** All test procedures were conducted in this Sub-Test and no discrepancies were noted. The MSL-100 Software Release MSL-12 responded properly to all rollover dates and meets all interoperability requirements for Y2K rollover dates.

j.   **D-10 Year 2000 Valid Set Dates.** All test procedures were conducted in this Sub-Test and no discrepancies were noted. The MSL-100 Software Release MSL-12 responded properly to all valid set dates and meets all interoperability requirements for Y2K valid set dates.

k.   **D-11 Year 2000 Invalid Set Dates**. All test procedures were conducted in this Sub-Test and no discrepancies were noted. The MSL-100 Software Release MSL-12 responded properly to all invalid set dates and meets all interoperability requirements for Y2K invalid set dates.

l.   **D-12 Screening, Zone Restriction, and DSN Access Restriction.** All test procedures were conducted in this Sub-Test and no discrepancies were noted. The MSL-100 Software Release MSL-12 meets all GSCR interoperability requirements for Screening, Zone Restriction, and DSN Access Restrictions.

m.   **D-13 Community of Interest (COI).** All tests were conducted in this Sub-Test and no discrepancies were noted. The MSL-100 Software Release MSL-12 meets all GSCR interoperability requirements for Community of Interest.

n.   **D-14 Automatic Message Accounting (AMA).** All the test procedures in this Sub-Test were conducted with no noted discrepancies. The MSL-100 Software Release MSL-12 meets all GSCR interoperability requirements for AMA.

o.   **D-15 Call Treatments.** All test procedures were conducted in this Sub-Test with no noted discrepancies. The MSL-100 Software Release MSL-12 meets all GSCR interoperability requirements for Call Treatments.

p.   D-16 Essential Service Protection (ESP). All test procedures were conducted in this Sub-Test and no discrepancies were noted. The MSL-100 Software Release MSL-12 meets all interoperability requirements for Essential Service Protection.

q.   D-17 Internal Overload Control (IOC). This requirement was not tested. Conditions could not be implemented to invoke IOC in the test laboratory, however this function is currently operationally fielded in both the DISN and Commercial Networks. To date this feature has no known reported discrepancies associated with this feature.

r.   D-18 Automatic Call Gap (ACG). All test procedures were conducted in this Sub-Test and no discrepancies were noted. The MSL-100 Software Release MSL-12 meets all GSCR interoperability requirements for Automatic Call Gap, Manual Controls.

s.   D-19 DSN Announcements. All test procedures were conducted for this Sub-Test with no noted discrepancies. The MSL-100 Software Release MSL-12 meets all GSCR interoperability requirements for DSN announcements.

t.   D-20 Nailed-Up Connections. All test procedures were conducted in this Sub-Test with no noted discrepancies. The MSL-100 Software Release MSL-12 meets all GSCR interoperability requirements for Nailed-Up Connections.

u.   D-21 Network Integration. All test procedures were conducted in this Sub-Test and no discrepancies were noted.   Sub-Tests D-2, D-4 and D-5 were re-tested over the network shown in Figure 2. The MSL-100 Software Release MSL-12 meets all GSCR interoperability requirements for Network Integration.

v.   D-22 Tactical Switch/DSN Interoperability. All test procedures were conducted for this Sub-Test with no noted discrepancies. The MSL-100 Software Release MSL-12 meets all GSCR interoperability requirements for Tactical Switch/DSN Interoperability.

w.   D-23 Advanced Defense Switched Network Integrated Management Support System (ADIMSS). All test procedures were conducted for this Sub-Test with no noted discrepancies. The MSL-100 Software Release MSL-12 meets all GSCR interoperability requirements for ADIMSS Interoperability.

x.   Letter of certification/compliance of "L" and "V" items listed in Table E-1 of Appendix E of the GSTP. The certification/compliance of "L" and "V" items listed in Appendix E of the GSTP were satisfied by letter from Nortel Networks. Nortel Networks' Software Release MSL-12 meets all the certification/ compliance category "L" and "V" in Table E-1 of Appendix E of the GSTP with minor exceptions. Exceptions were reviewed and assessed by the Defense Information Systems Agency, Information Transport Engineering Support Organization (DISA, ITESO), D6, and determined to have no adverse operational impact.

13.   SUMMARY. The Nortel Networks' MSL-100 Digital Switching System with Software Release MSL-12, and software patch groups listed in Table 1, is certified for use in the DISN, in accordance with the requirements set forth in reference (c). Minor discrepancies identified during testing and the GSCR requirements not conducted will have no adverse effects on capabilities essential for mission accomplishment.   A summary for each Functional Interface required by the GSCR is given in Table 5.

Table 5. Functional Interface Certification Status Summary

GSCR Functional Interface Requirements	Critical	Status
Preset Conference	Yes	Passed
Multi-Level Precedence and Preemption	Yes	Passed
Hot Line Services	Yes	Passed
System Interface	Yes	Passed
CCS/SS7	No	Passed
Integrated Services Digital Network	No	Passed
Attendant Services	Yes	Passed
System Admin, Measurements and Service Standards	No	Passed
Y2K Rollover Dates	Yes	Passed
Y2K Valid Set Dates	Yes	Passed
Y2K Invalid Set Dates	Yes	Passed
Screening, Zone Restriction, and DSN Access Restriction	Yes	Passed
Community of Interest	No	Passed
Automatic Message Accounting	Yes	Passed
Call Treatments	Yes	Passed

Table 5. Functional Interface Certification Status Summary (continued)

GSCR Functional Interface Requirements	Critical	Status
Essential Service Protection	No	Passed
Internal Overload Control	No	Not Tested
Automatic Call Gap	Yes	Passed
DSN Announcements	Yes	Passed
Nailed Up Connections	No	Passed
Network Integration	No	Passed
Tactical Switch/DSN Interoperability	No	Passed
Advanced Defense Switched Network Integrated Management Support System (ADIMSS)	Yes	Passed